THE BICYCLE MASTER PLAN

Community Advisory Group Meeting #2

March 2, 2016

Topics

[1] Welcome / Introductions

[2] Level of Traffic Stress

[3] Goals, Objectives, Performance Measures

[4] New Business

[5] Public Comment

Housekeeping

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- Speaker Series
  - Jennifer Toole on 2/23
  - Jeffery Tumlin (Nelson/Nygaard) on 3/16
- Additional meetings in April and May?

What is Level of Traffic Stress?

Level of Traffic Stress

- Initially developed by Peter Furth

- Characteristics
  - Uses attributes of road/path to determine amount of traffic stress bicyclists experience
  - Streets are ranked from LTS 1 (very low stress) to LTS 4 (high stress)
  - Treats links differently from crossings

Uses of Level of Traffic Stress

- Enables connectivity analysis of the network at different stress levels.

- It will also allow us to target investment so that they'll have the biggest impact on the network.

Four Types of Transportation Cyclists

Strong and Fearless (~7%)

Enthused and Confident (~5%)

Interested but Concerned (~51%)

No Way, No How (~37%)

LTS Shows Networks Available

- LTS assumes that each cyclist will tolerate a certain amount of stress. If a street is above that threshold, they won't use it.

- Parts of the network are unavailable to cyclists in the lower stress tolerant levels.

Stress Levels

Level of Traffic Stress

- Furth LTS:

    - LTS 1:   Very Low Stress
    - LTS 2:   Low Stress

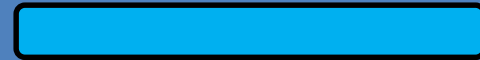   - LTS 3:   Moderate Stress
    - LTS 4:   High Stress

Level of Traffic Stress

- Revised LTS:
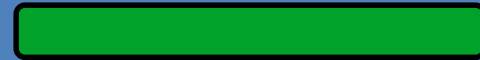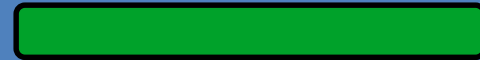 - LTS 0:   No Traffic Stress
  - LTS 1:   Very Low Stress
  - LTS 2:   Low Stress
  - LTS 2.5: Moderate Stress
  - LTS 3:   Moderate Stress
  - LTS 4:   High Stress
  - LTS 5:   Very High Stress

Level of Traffic Stress

- Revised LTS:
  - LTS 0:   No Traffic Stress
  - LTS 1:   Very Low Stress
  - LTS 2:   Low Stress
  - LTS 2.5: Moderate Stress
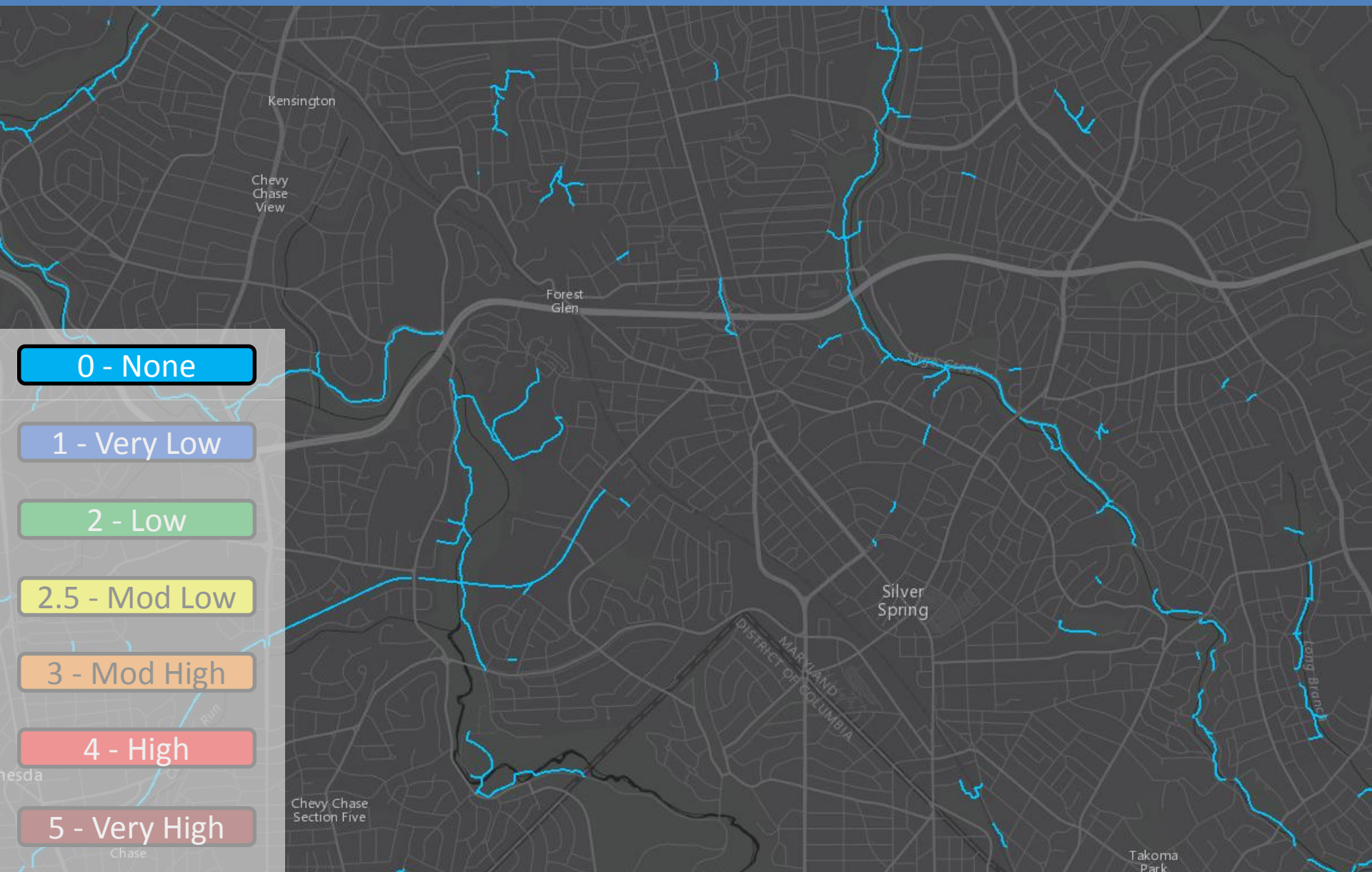 - LTS 3:   Moderate Stress
  - LTS 4:   High Stress
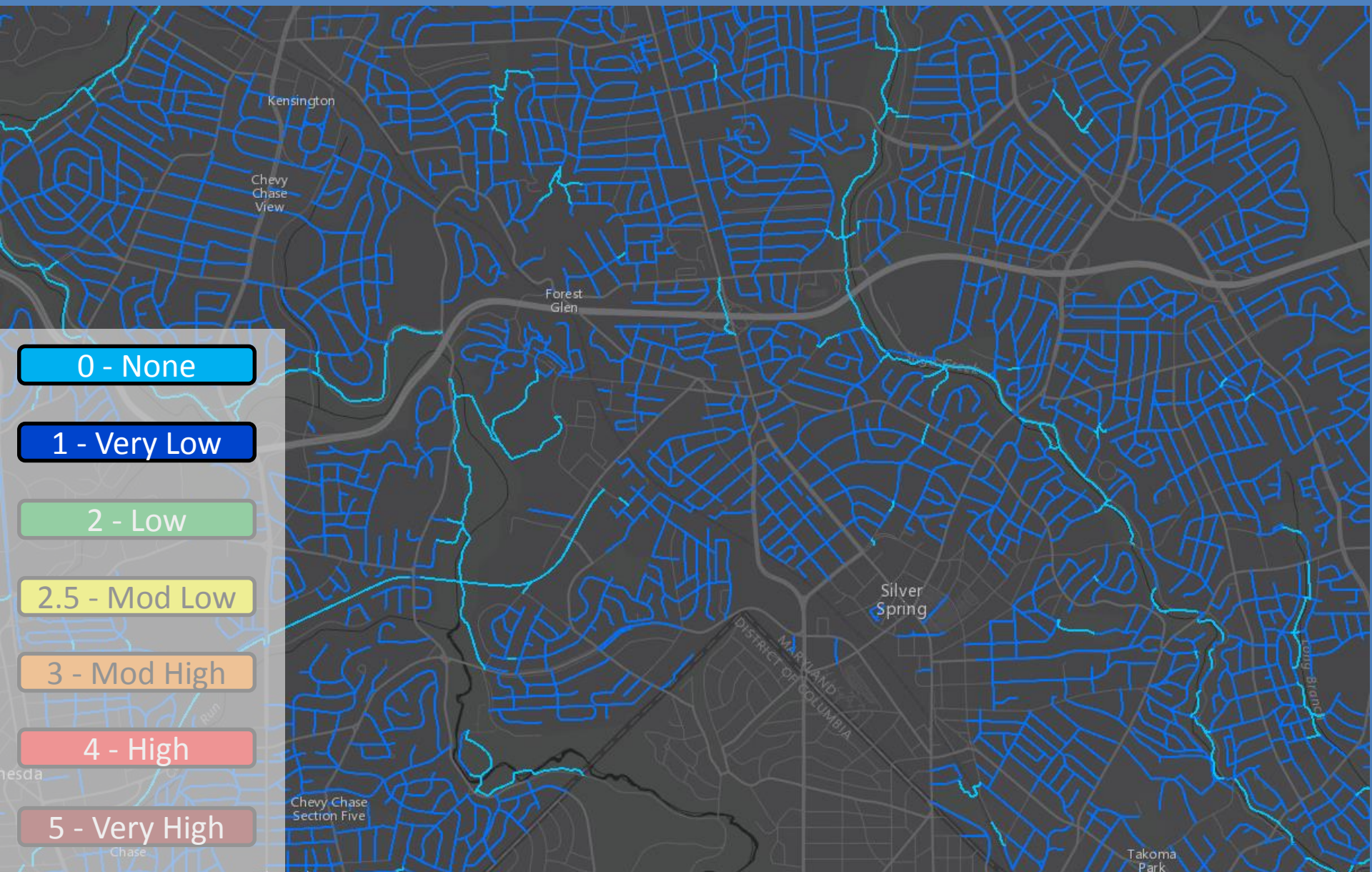 - LTS 5:   Very High Stress

Stress Mapping
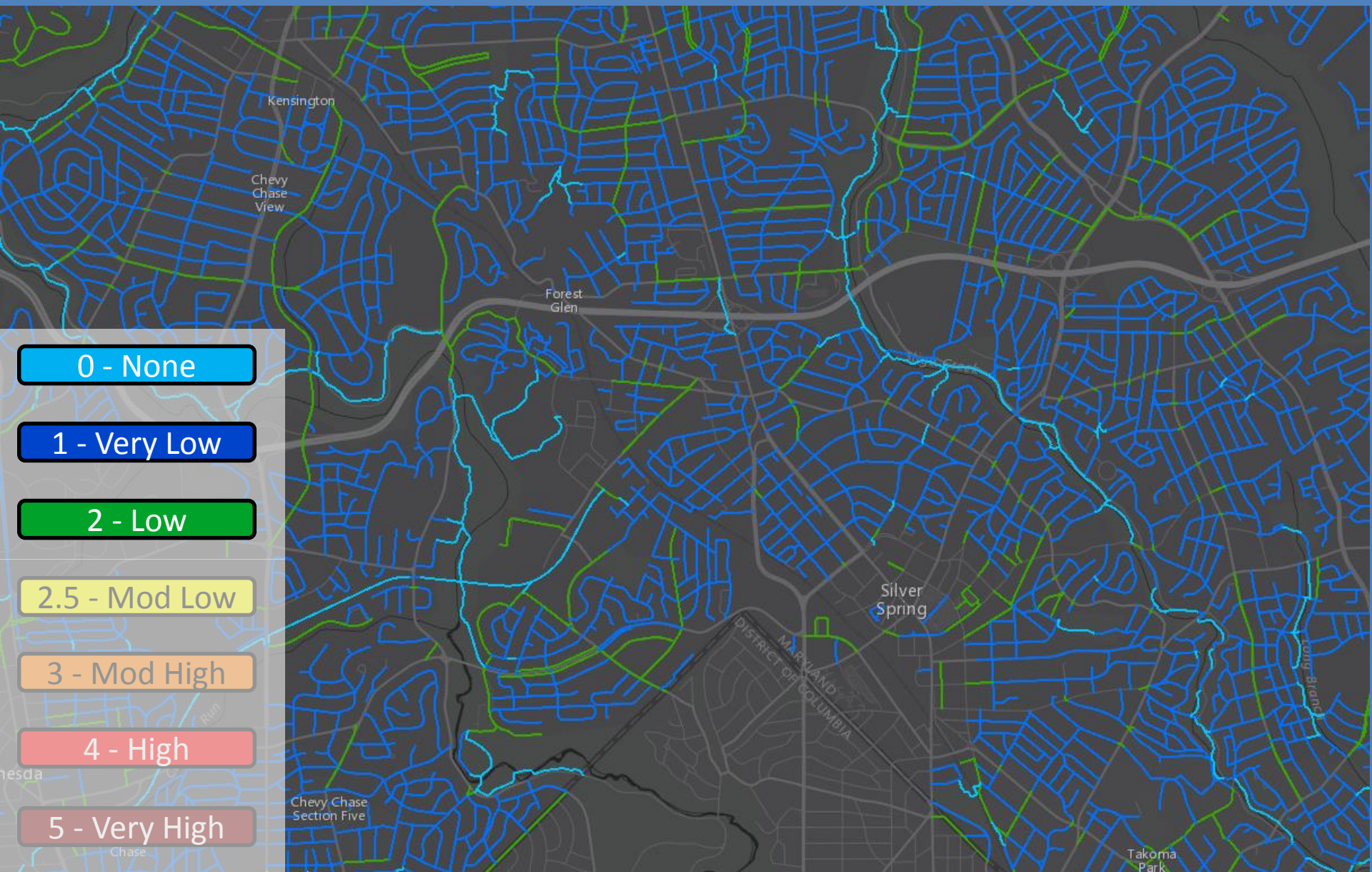
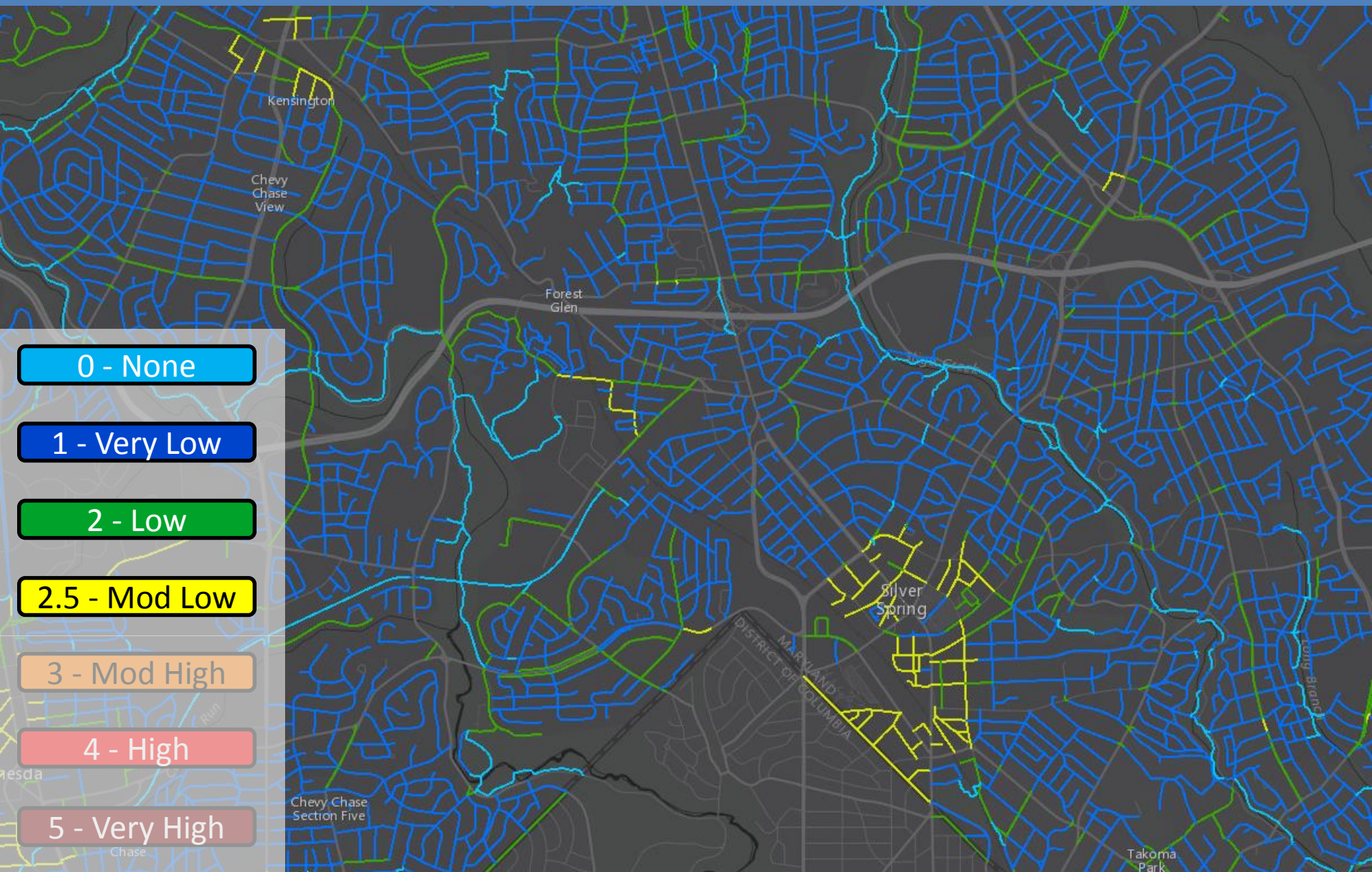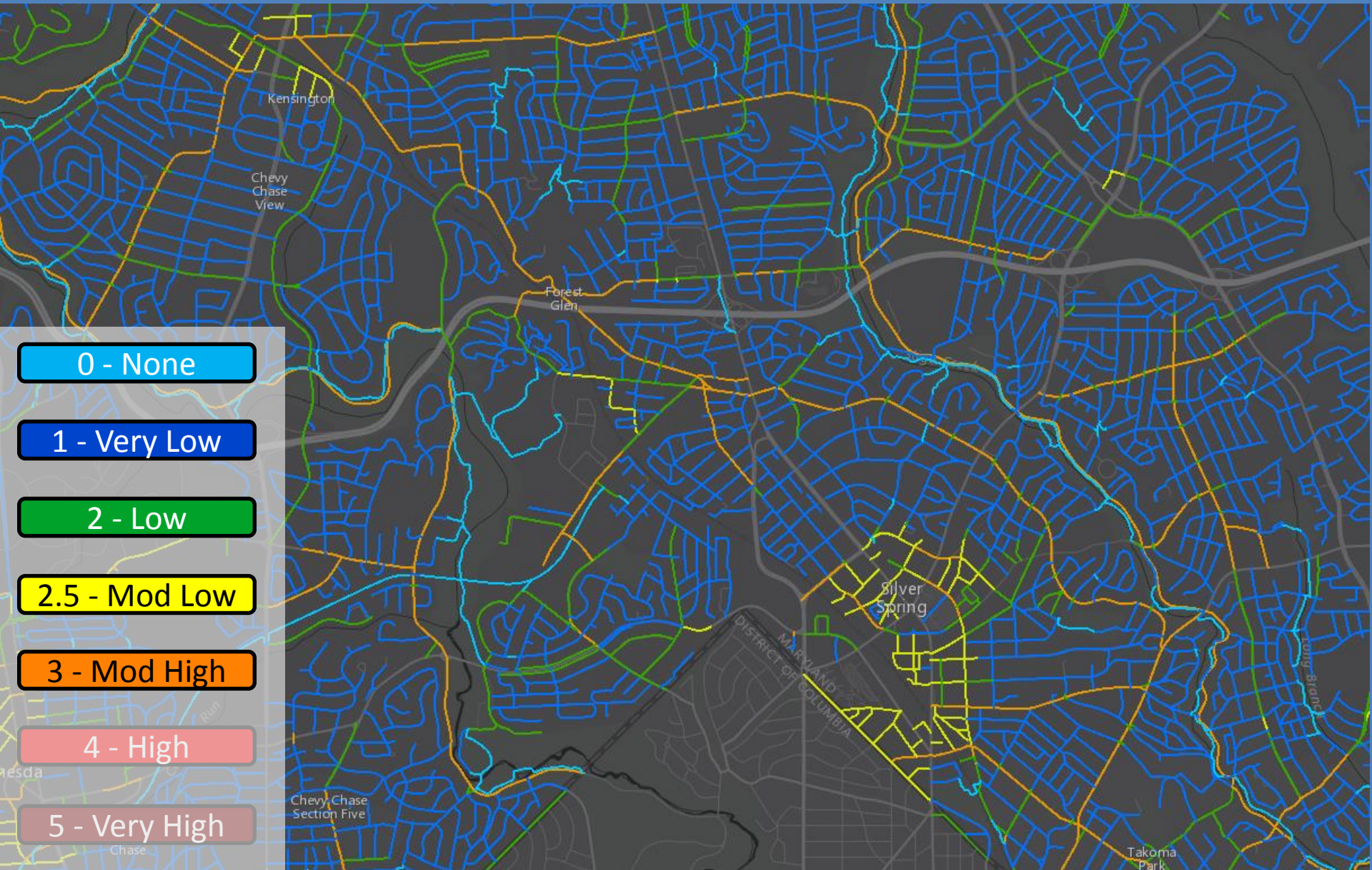# Traffic Stress Tolerance: None

Traffic Stress Tolerance: Very Low

Traffic Stress Tolerance: Low

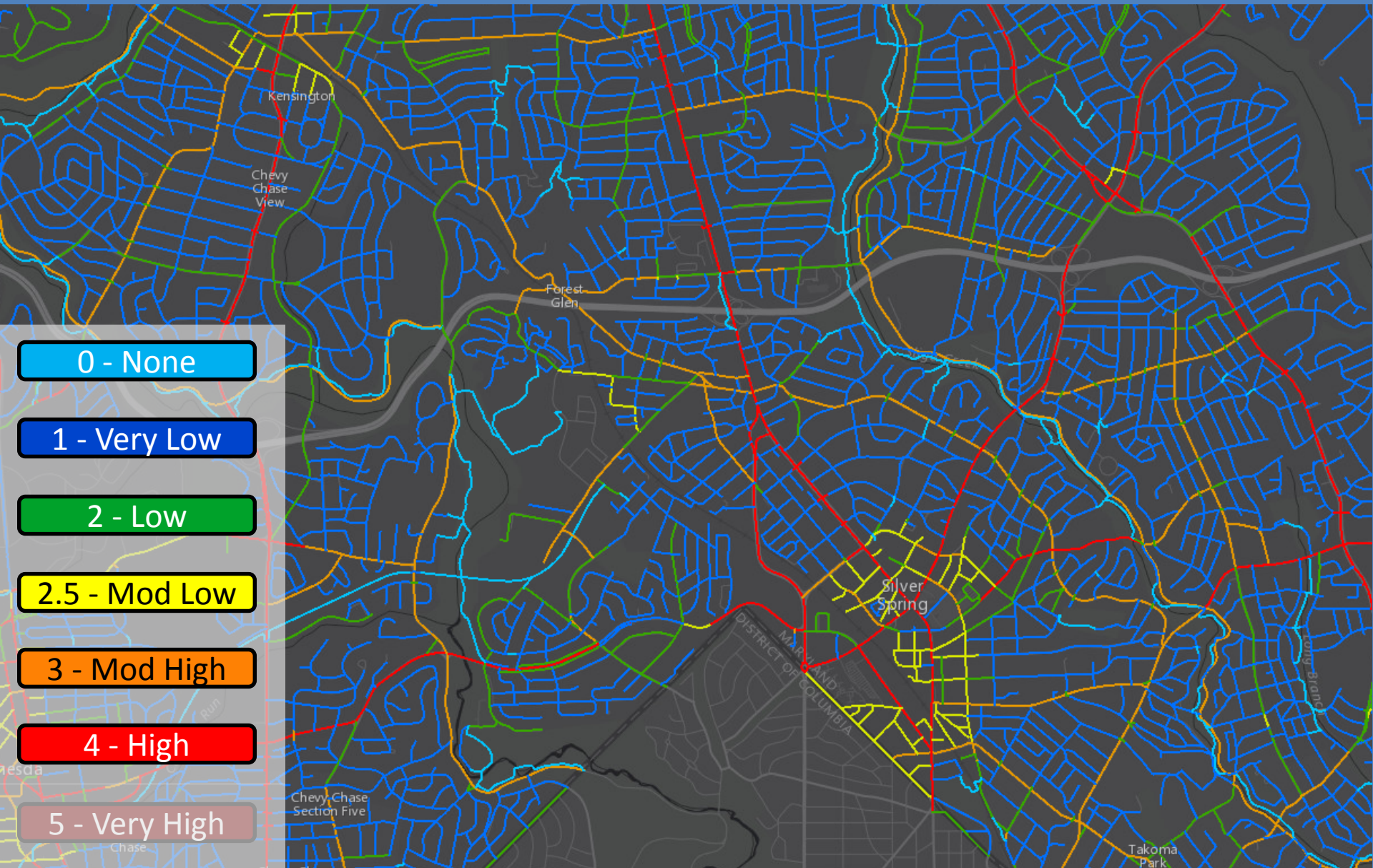# Traffic Stress Tolerance: Moderate Low

Legend:
- 0 - None
- 1 - Very Low
- 2 - Low
- 2.5 - Mod Low
- 3 - Mod High
- 4 - High
- 5 - Very High

Traffic Stress Tolerance: Moderate High

Traffic Stress Tolerance: High

Legend:
- 0 - None
- 1 - Very Low
- 2 - Low
- 2.5 - Mod Low
- 3 - Mod High
- 4 - High
- 5 - Very High

Traffic Stress Tolerance: Very High

Legend:
- 0 - None
- 1 - Very Low
- 2 - Low
- 2.5 - Mod Low
- 3 - Mod High
- 4 - High
- 5 - Very High
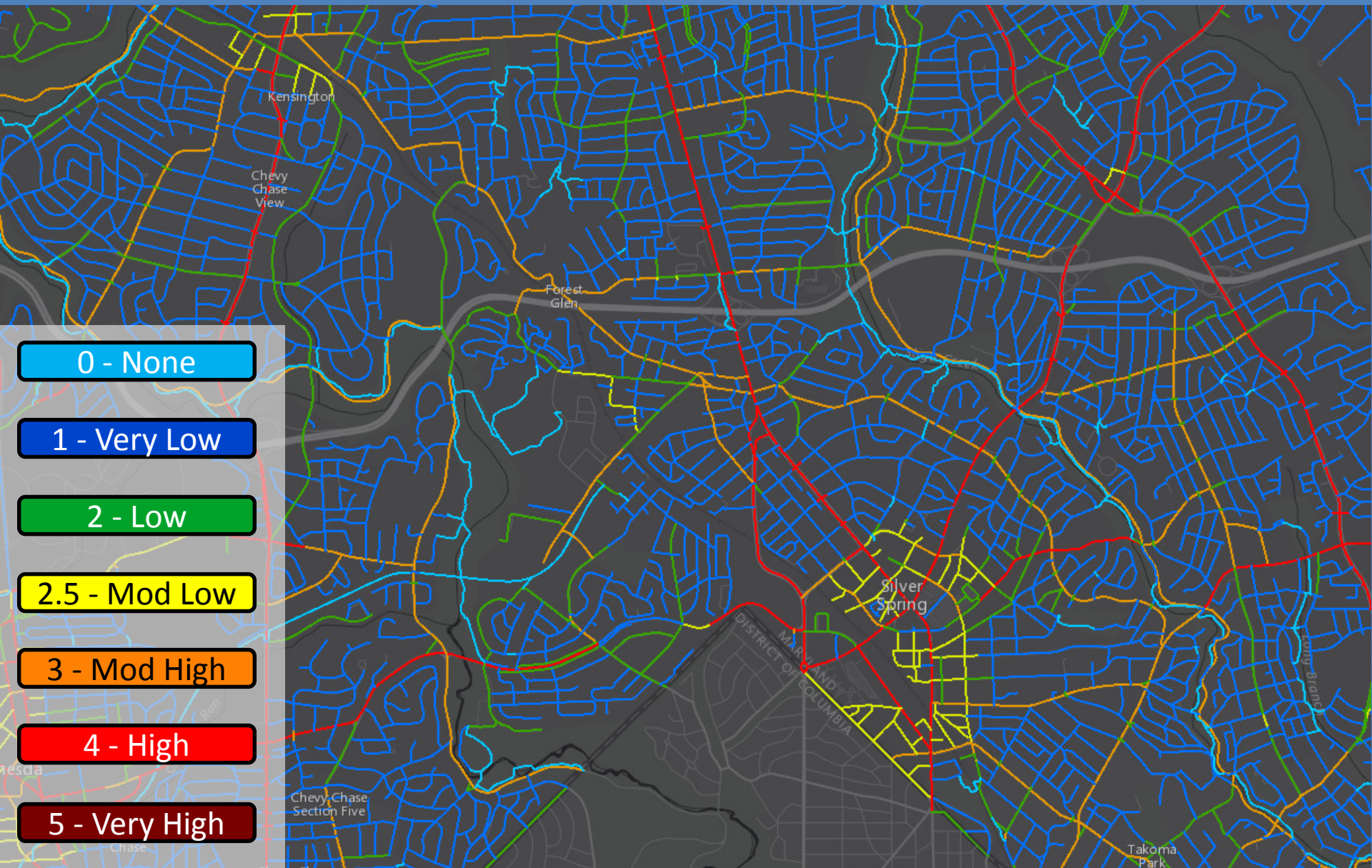
LTS Attributes

Attributes of LTS: Original Furth Method

Number of Travel Lanes

Type of Bike Facility

Bike Lane Width

Posted
Speed Limit

Parking Turnover

Striped Center Line

Attributes of LTS: Revised Method

Added attributes

Buffer Type for
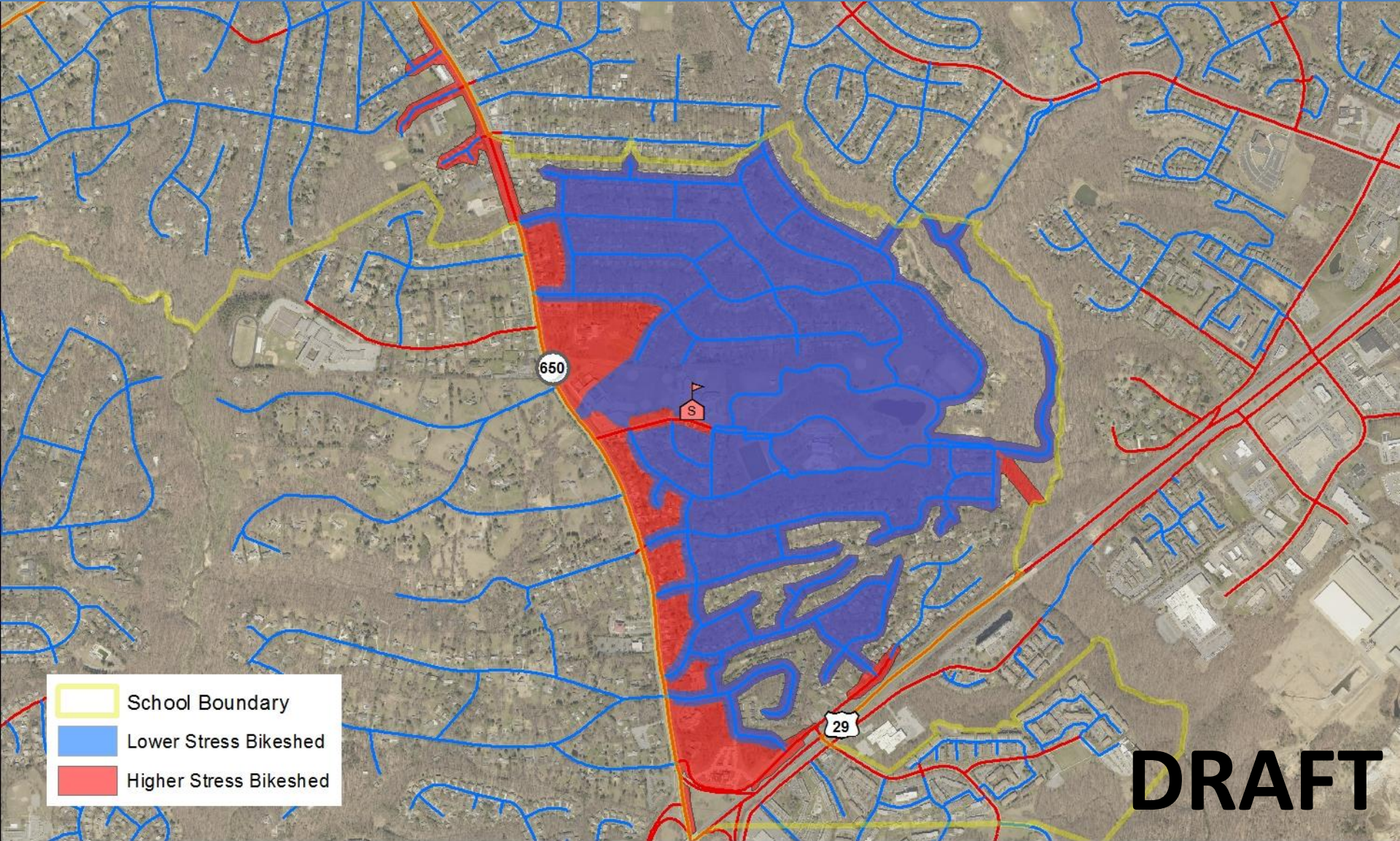Bike Facility

Industrial Street

Driveway Frequency

Very Low Stress School Analysis

Jackson Elementary School
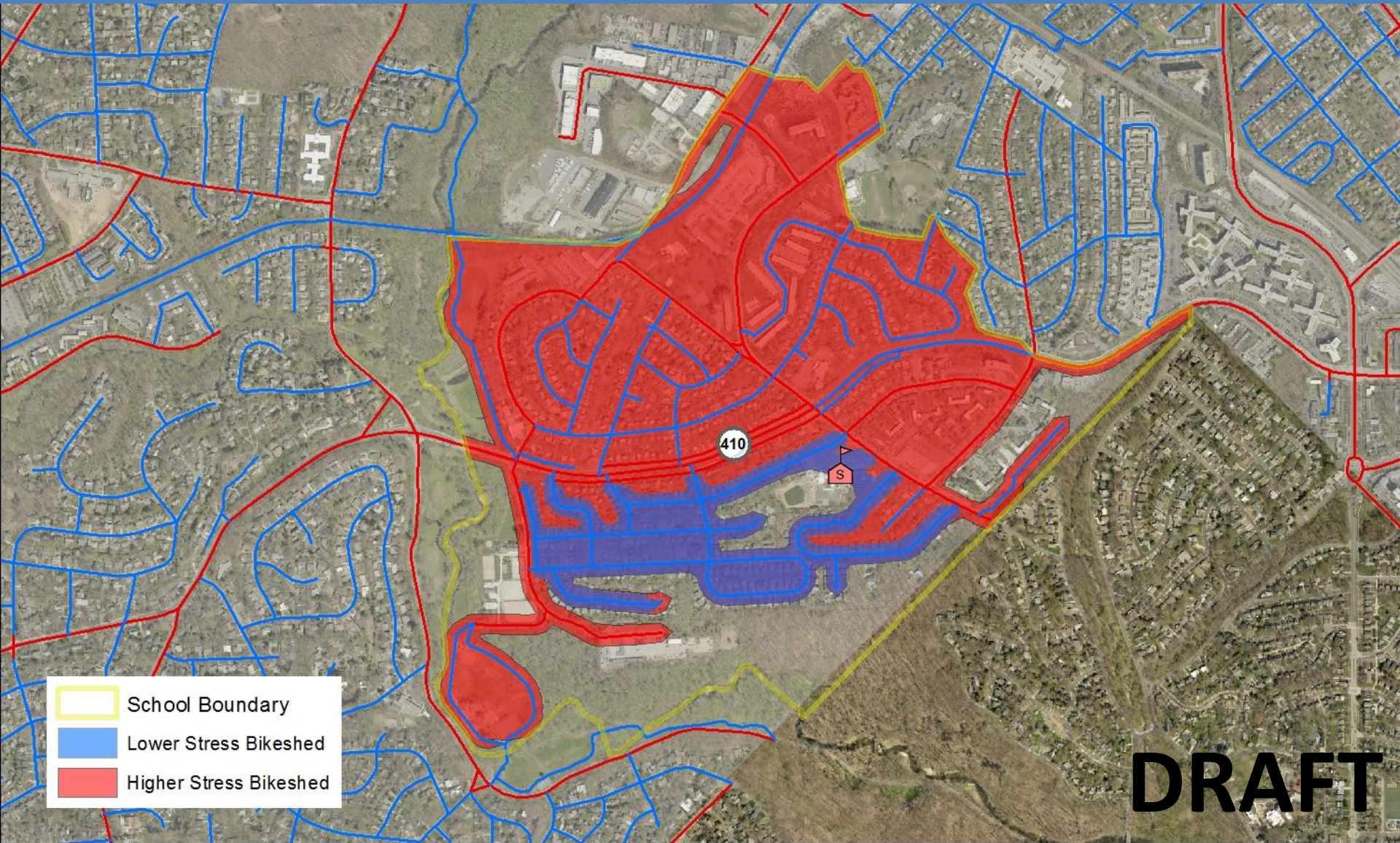
Low Stress Connectivity = 94%

School Boundary
Lower Stress Bikeshed
Higher Stress Bikeshed

DRAFT

Rock Creek Forest Elementary School

School Boundary
Lower Stress Bikeshed
Higher Stress Bikeshed

410

DRAFT

Very Low Stress School Analysis

School Level	Bikeshed	Very Low Stress Connectivity
Elementary Schools (n=133)	1.0 mile	28%
Middle Schools (n=38)	1.5 mile	14%
High Schools (n=25)	2.0 mile	6%

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Comments from Advisory Group

Comments Categories

- Overall Approach

- Data Collection, Travel Patterns and Metrics

- Additional Data Needs

- Table 1: Methodology for Street Segments

- Table 2: Methodology for Intersections

Overall Approach

- Most comments supported Level of Traffic Stress Approach

Overall Approach

Comment #1

- ...the team's approach of adding three additional levels of stress is a disservice to the County.

- Manipulating Furth's system, which is based on years of research and analysis, places the County outside Furth's system of evaluation.

Overall Approach

Comment #2

- I'd change the ranking used for the moderate high, high and very high levels on many different roads.

- ...I realized we're looking at 'good' roads and 'bad' roads. The LTS map does a good job with that differentiation.

- I don't think we should spend a lot of time discussing which roads are really 3s and which are really 4s.

Overall Approach

Comment #4

- Can the Bicycle Master Plan Scope of Work be extended to cover bicycle travel data collection?

Overall Approach

Comment #5

- Once we have current bicycle travel data in hand, how do we extrapolate it to obtain anticipated future bicycle travel patterns?

Overall Approach

Comment #6

- What analytics do we apply to the data?

Additional Data Needed

Comment #7

- The map needs to include slope. (from 2/2016 meeting)

Additional Data Needed

Comment #7

- The map needs to include sight distance. (from 2/2016 meeting)

Goals, Objectives, Performance Measures

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Goals

- Broad statements of a desired state
- General and brief

Example: Create a low-stress bicycling network

Objectives

- Specific statements that describe desired outcome
  - Quantifiable
  - Time specific
  - Achievable

Example: 50% of high school students will be able to get to school on a low-stress bicycle network by 2025.

Performance Measures

- Used to quantify objectives
- Define data needs

Example: The number of high school students that can bicycle to school on a low stress bicycle network.

Bicycle Issues Discussion

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Bicycle Issues Discussion

- Provide a mix of bicycle parking
- Create a low-stress bicycling network
- Create a multi-modal culture
- Implementation challenges
- Improve education about bicycling
- Identify focus areas for bikeshare
- Equity
- Economic benefits of bicycling
- Use of metrics
- Safety